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## Distributional Records on some North American Beetles with Remarks on their Ecology in Southern California \*

(Notes on North American Coleoptera, No. 9)

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In recent years, under the great inspiration of Dr. Fred S. Truxal, Los Angeles County Museum, Department of Entomology, a small but enthusiastic group of entomologists undertook extensive collecting of insects in southern California. This cooperative effort was not the result of a schedule; rather it was the result of anonymously executed individual activities engaged in by members throughout the southern part of the state. The results were revealed to each other through correspondence, conversation, or at the meetings of the various entomological clubs existing in the region. This work, I sincerely hope, will eventually result in a more satisfactory knowledge of our fauna. The collecting is urgent, especially in Los Angeles and San Bernardino counties, where the rapid expansion in population is taking over the wild areas, and where the recent forest and brush fires have wrought great destruction. There

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must be no delay in recording the fauna, and in securing data on life habits and other important matters.

In studying earlier publications on the insect fauna of southern California, it is easy to see that the once densely covered forests, brushes, valleys, deserts and other habitats no longer exist and that their inhabitants have moved away or died out. I do not refer to the injurious species, for their absence is the result, more or less, of expanding control programs, but rather, for example, to water beetles of all sorts, mud-loving beetles and to some Carabidae with similar habits, which have practically disappeared along with the water (for comparison see H. C. Fall: List of Coleoptera of Southern California with Notes on Habits and Distribution. Occasional Papers California Academy of Sciences, No. 8, 1901, 282 pp.). All information obtainable should be recorded before it is too late and before the industrialization and the smog take over this once blooming desert land.

Members of two families are mentioned in the present paper, the Carabidae and Meloidae. In certain cases, where it is necessary to have a complete picture of the distribution of the species, other localities are also mentioned.

#### Family CARABIDAE

**Nebria metallica** Fischer.—Recorded from the Aleutian Islands (Van Dyke, 1924) to the extreme northern part of California (Fall, 1901). Hatch (1939) mentioned British Columbia and Washington. Seven specimens in the author's collection come from Mint Canyon in the Angeles National Forest, Los Angeles County (two specimens, May 1956), and from the San Bernardino Mts., in the vicinity of Lake Arrowhead (five specimens, July 1957). One of the specimens from the Mint Canyon has moderately heavy punctures on the elytra, otherwise as the others.

**Nebria kincaidi** Schwartz.—Originally described from Alaska, from a single specimen (Type No. 5258, U. S. Nat. Mus.), collected in Farragut Bay, June 5, 1899, as a species allied to *N. ingens* Horn and *N. ovipennis* LeC. Nine speci-

mens in the writer's collection are from Bend, Oregon (July), with two moderately outlined red spots between the eyes. Normally, the tarsi and the mouthparts are piceous, but in all my specimens they are not reddish brown, and the color of the elytra resembles more *metallica* Fischer; instead of being metallic cupreous green, it is more purplish cupreous and only the sides of the elytra have a slight indication of green. In other features, the specimens from the vicinity of Mt. Rainier, Washington, are more similar to the Oregon specimens than to the type from Alaska. Hatch (1939) recorded the species first from the extreme northern part of Oregon (Mt. Hood), and also from the state Washington.

**Tachyura audax** LeC.—Previously reported from Texas, Arizona and Utah. The writer collected two specimens in California's high desert area 5 miles SE of Little Rock, Calif., on the western shores of the Little Rock Wash on July 26, 1958. Five other specimens in the author's collection are from Tujunga Canyon, Los Angeles County, taken by Mr. George P. Mackenzie on March 12, 1946. Other specimens from the same location are in the Mackenzie collection.

**Platynus brunneomarginatus bicoloratus** G. & H. (= *bicolor* LeC.).—In very wet soil with heavy grass vegetation on the shores of the Little Rock Wash, 5 miles SE of Little Rock, Los Angeles County, California, on July 26, 1958, five specimens.

**Helluomorpha texana** LeC.—Few specimens collected sporadically in southern Arizona, as a new record. Previously known from Indiana and Texas. The Robert H. Crandall collection (Altadena, Calif.) has specimens from Tucson, Arizona (July 23, 1948) and Dr. John A. Comstock (Del Mar, Calif.) collected and sent me two specimens during his collecting trips from the Madera Canyon, Santa Rita Mts., southern Arizona (July 30, 1954 and July 20, 1955). Comstock collected both specimens at night attracted by light. The Los Angeles Museum has examples from the same location, collected by F. S. Truxal and Lloyd Martin. The species up to now has not been observed in California.

**Chlaenius cumatilis** LeC.—This species is commonly found in the foothill canyons in the San Gabriel Mts., California. In July 26, 1958, the writer collected two specimens in the Little Rock Wash, which is on the southern part of the Mojave Desert, an area where this species has never been recorded. It is noteworthy that these specimens are slightly darker than those from the San Gabriel Mts., and their prothorax and head are more iridescent greenish-blue, and their elytra a slightly darker blue. This species quite frequently observed also in the San Francisquito Canyon (Stange and Menke) and in the Tujunga Canyon in Los Angeles County (Mackenzie and Papp), the opposite, southern slopes of the Angeles National Forest, in which area the species seem to be most easily found during May until the first part of July. Most common in moist areas, and in mid-summer occurred sporadically under rocks in more or less shady places.

**Chlaenius sericeus** Forst.—According to our present knowledge of its distribution, it is difficult to outline the area where this beautifully colored species occurs. Sporadically collected in Canada and the United States. To add to its distribution I would like to mention some data from my collection: Farewell Bend, Snake River, Oregon, taken in July by K. M. and D. M. Fender; three specimens from Lakeside, Arizona, collected by G. P. Mackenzie in August, 1948.

**Agonoderus lineola** Fab.—A well known Harpalini throughout the entire country. First Dr. L. D. Anderson of the Department of Entomology, Citrus Experiment Station, University of California at Riverside, called my attention to this beetle in Riverside in the early part of May 1958. Several phone calls from citizens testified that this beetle had invaded certain parts of the nearby territory, and definitely was a nuisance at March Air Force Base and other parts close to the Box Springs Mts. in Riverside County. With the help of my porch lights on May 17th, my house was the target of an invasion during the night hours between 8 and 11 P.M. Next day in certain hidden corners of the house several hundred specimens were found, hiding from the bright desert sunshine. After about the 25th

of the month they disappeared and were not observed the rest of the year.

#### Family MELOIDAE

**Tegrodera erosa** LeC. is a widely distributed species, recorded from Texas, New Mexico, Arizona and southern California, but not from Mexico. Very easy to recognize: the elytra with numerous, coarse, reticulating, elevated yellow lines; the sutura, lateral markings, and a band before the middle, entirely fuscous. Head and prothorax orange yellow. Nine specimens from Covered Wells, Pima County, Arizona (August 30, 1950) in the writer's collection are typical specimens (collected by Lloyd Martin).

Horn (1891) described a new race of *T. erosa* as *latecincta* (Trans. Amer. Ent. Soc., p. 44), which race was later considered as a good species (Leng: Cat. Col. Amer. 1920, No. 8117). Horn collected his specimens in Owens Valley, California. Recently (June 8, 1958) the author collected series of a very similar form in the Box Springs Mts., between Riverside and San Bernardino, on the southern slopes of the rocky hills. Just above Highlanders Village of the dry slopes of this range, in the eastern side of the Rattle Snake Canyon, first my daughter collected two specimens, then, on the same day, a short family excursion resulted in 27 more shortly before sundown. One week later, my son added 25 specimens from the same location collected during his trip on rattle snake observation. Prof. P. H. Timberlake, systematic entomologist in our Station, mentioned next day that some years ago he collected a series and observed hundreds of the same species on the University campus. During the next two weeks we searched the mountains for other specimens but we were unable to locate any.

Horn (op. cit.) described his species, the race *latecincta*, a little more robust and the texture of the elytra firmer and less coriaceous. In my collection I have a specimen from the Garden of the Gods, Manitou County, Colorado (new for the state), taken January 8, 1915, which completely fits the description given by Horn. However, the specimens from the Box

Springs Mts. have more coriaceous elevations on the elytra, which elevations are slightly darker than in *erosa* from Pima County, Arizona (coll. by L. Martin). The head darker reddish-brown; the prothorax, legs, body beneath, apex and lateral margins, and the non-elevated portion of the elytra are deep black. The antennae, with the exception of the reddish-brown first joint, are entirely black. The typical black stripes across the elytra just before the middle, wanting entirely in eight specimens, in others with only a slight yellowish-gray tone on the elevated parts. The specimens collected by Timberlake, now in the collection of the Department of Biological Control, University of California at Riverside, were found to be the same.

Another specimen in the writer's collection from Inyo County, California (collected by Manzanar, June 29, 1943) has all the typical black features beautifully developed, but the ground texture of the elytra is finer than that of others mentioned above, and the margin of the black and heavily rugulose prothorax red and shining, the sutura forward from the median band of the elytra widely black, especially around the scutellum, also the shoulders are black.

Next season more attention will be paid to the study of the form in the Box Springs Mts., and an extensive study of the relationship between the species and its forms from different locations will be the subject of research. Any cooperation in this problem will be greatly appreciated.

*Lytta nitidicollis* LeC.—Fall mentioned (in op. cit., as *Cantharis*) that this species occurs in "Pasadena, Riverside, San Diego, in May; rare at the former places, more common in San Diego." Collecting in Pasadena and its vicinity for more than five years, I do not know anyone who has collected this species recently. It seems to me to be one of those which have disappeared from this rapidly growing part of Los Angeles County. On June 29, 1958, during a field trip in the Box Springs Mts. about 4 miles SW from Loma Linda, in San Bernardino County, on *Brassica micans* I collected 41 specimens, of which about 15 pairs were in copulation, between 6 and 8 P.M. One week later the beetles all disappeared and were

not observed the rest of the year. This is the only spot in these mountains where this species is ever observed and collected.

**Calospasta elegans** LeC.—About a half a mile south of the locality of the above mentioned *Lytta* species, in a closed area about 3,000 square feet in size, on June 29, 1958, twelve specimens of this colorful beetle were collected on the dry remains of *Eriastrum*. Four days later 5 more specimens, and in middle of July an additional 72 specimens were secured from the very same spot. It is noteworthy that during the time (approximately three weeks) no specimens were found in copulation. It is quite interesting that small and large females of this species were found in about equal numbers. Eleven specimens collected by the writer, and others added by Mr. Harold D. Pierce (U. S. Dept. Agric., Riverside, Calif.), are from the Lancaster area in the Mojave Desert, all collected during the month of July, 1958.

**Calospasta elegans** var. *humeralis* Horn.—From the vicinity of Borrego, San Diego County, large series collected by G. P. Mackenzie in March 1939, of which the writer has 27 specimens in his collection. The typical *elegans*, mentioned in the previous paragraph, shows a slight indication of color variation, the bluish markings sometimes smaller or larger, but all the specimens of var. *humeralis* are exactly the same.

**Calospasta perpulchra** Horn.—This species first caught my attention during the past three years. Specimens secured from different localities show typical characters in the pattern of the elytra. While it is observed that they are typical of a certain region of southern California, regions which are well separated by mountain ranges, I take the liberty of introducing two new varieties of this species, which are characterized in the following short key:

- Both the metallic blue bands on the elytra are complete.  
 From Palm Springs area in Riverside County, in April. . . . .  
 . . . . . **perpulchra** Horn.  
 a. The first metallic blue band never reaches the margin of  
 the elytra, and often is very short. From Mojave Desert,

- Victorville and Barstow, in May.....  
 .....**var. mackenziei** new var.<sup>1</sup>  
 b. The first metallic band is not present, the second one is  
 wide and complete, with a perfect round inclosure of a  
 moderately large yellow spot near the apical portion of the  
 elytra. From Vincent area, in July.....  
 .....**var. bioculata** new var.

**Nemognatha.**—This genus is well represented with 15 species from southern California. Before I submit the distributional records of my collection, I would like to summarize the individual species, their distribution and their food plants as known to me. The enumeration may be a help to students interested in this genus.

**N. apicalis** LeC. occurs in the entire state on *Helianthus*, *Grindelia* and *Solidago*.

**N. bifoveata** Enns is from the extreme eastern part of southern California and is to be found on *Monarda*.

**N. bridwelli** Wellm. in San Bernardino County and southward, on *Pluchea* weeds.

**N. cribraria** LeC. known from Ventura County on *Chrysothamnus*.

**N. cantharidis** MacSw. distributed in southern California, in the southwestern San Bernardino County on *Encelia farinosa*, in Imperial County on *Garaca*, in San Diego County on *Pluchea* and in Riverside County on *Encelia* and *Pluchea*.

**N. curta** Enns from Inyo County and the western slopes of the Death Valley. The host plant is unknown.

**N. dichroa** LeC. from the middle of the state of California and in the northeastern desert area of southern California on *Helianthus*.

**N. dubia** LeC. north from San Diego and Riverside Counties, frequently observed on *Helianthus annuus*.

**N. hurdi** MacSw. in the western half of southern California and up to the north, on *Grindelia* and *Hemizonia heermannii*.

<sup>1</sup> In honor of Mr. George P. Mackenzie, San Marino, California, a pioneer coleopterist of the Pacific Southwest, sincerely dedicated.

**N. macswaini** Enns except the northwestern part of southern California, on *Larrea*, *Encelia* and *Covillea*.

**N. miranda** Enns in the western and southern part of southern California. Host plant unknown.

**N. nigripennis** LeC. In the entire state, on *Eriastrum*, *Grindelia*, *Pluchea*, *Eriogonum*, *Chrysothamus*, *Bahia* and *Asclepias*.

**N. pallens** LeC. south from the Death Valley, on *Icosoma*.

**N. scutellaris** LeC. from the entire state of California, on *Layia*, *Eriogonum*, *Calyptridium*, *Malocothrix*, *Achillea*, *Asclepias*, *Monardella*, *Erysium* and *Eriophyllum*.

**N. soror** MacSw., a widely distributed species, from Santa Barbara County up to British Columbia, on *Achillea millefolium*.

There are a few new records of the species of *Nemognatha*. If not otherwise noted, all the locations are in southern California: **N. dichroa** from Vincent, Los Angeles Co., 10 specimens collected in July. No record was taken of the host plant.—**N. cantharidis** with 19 specimens from Borrego, Borrego State Park, in the southern part of the Santa Rosa Mts. San Diego Co., all taken in March on *Pluchea*.—**N. dubia** with two specimens from Somis, Ventura Co., and one from Calabasas, Los Angeles Co., taken in August by G. F. Maughmer.—**N. nigripennis** with four specimens from Mt. Wilson, near Pasadena, Los Angeles Co.; seven specimens from Lake Arrowhead, San Bernardino Co., during March and July; four specimens from the San Gabriel Canyon, Los Angeles Co., end of May and July.—**N. scutellaris** with eleven specimens from the Mojave Desert, from Barstow, Little Rock, Victorville and Hesperia, all in April, and one specimen from Vincent, taken in June.—**N. immaculatus** Say with 18 specimens, all from Arizona: Tucson, in September, Showlow in August, and Lakeside in July and August, all collected by G. P. Mackenzie.<sup>2</sup>

<sup>2</sup> While this manuscript was in preparation there came the tragic news of the death of Mr. George P. Mackenzie. A complete story of the life of the deceased, a pioneer of western entomology, will be given later in the Bulletin of the Southern California Academy of Sciences, Los Angeles, Calif.